

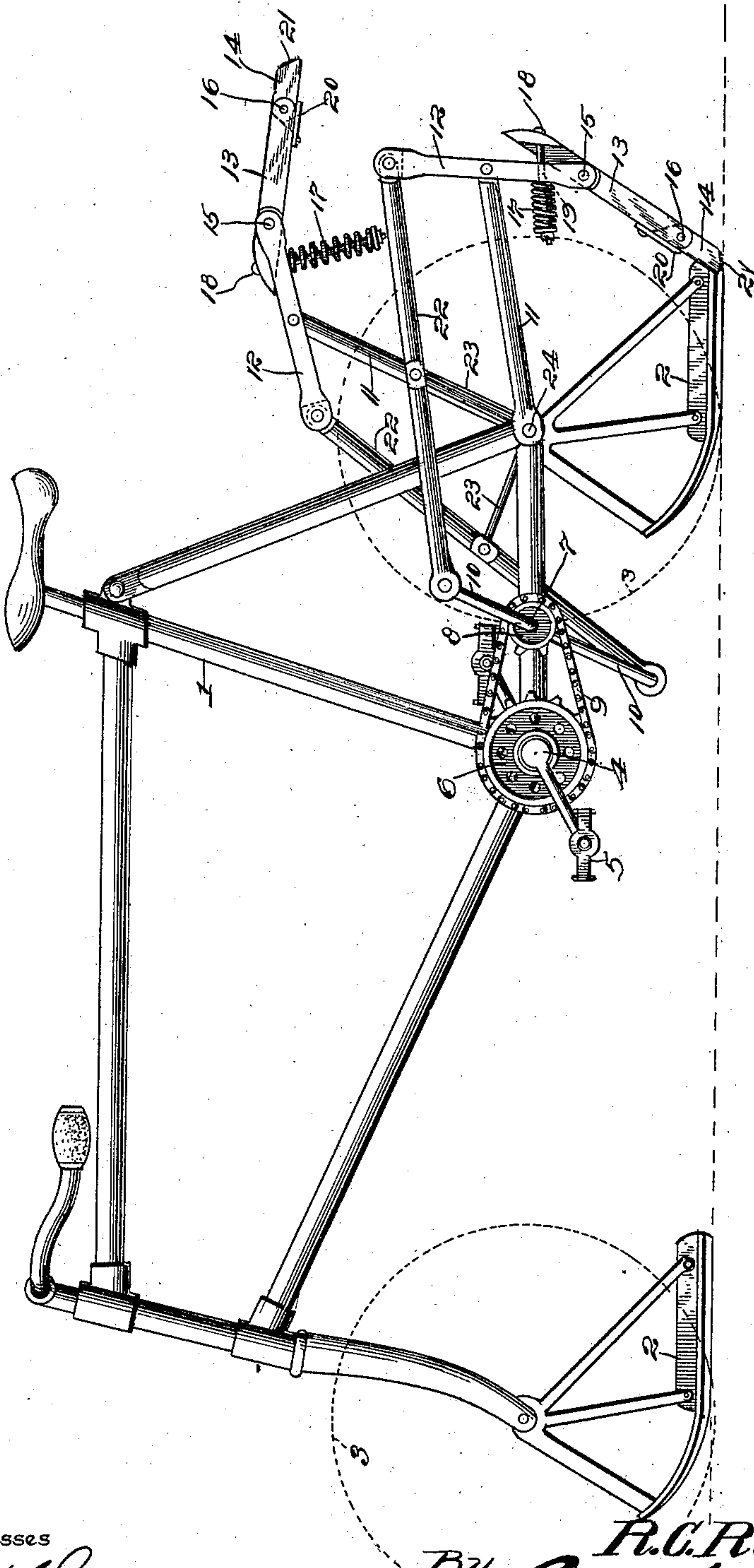
No. 686,140.

Patented Nov. 5, 1901.

R. C. ROTH.
VEHICLE PROPELLER.

(Application filed Apr. 5, 1901.)

(No Model.)



Witnesses
Fred B. Maynard
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UNITED STATES PATENT OFFICE.

ROBERT C. ROTH, OF KILLION, INDIANA.

VEHICLE-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 686,140, dated November 5, 1901.

Application filed April 5, 1901. Serial No. 54,527. (No model.)

To all whom it may concern:

Be it known that I, ROBERT C. ROTH, a citizen of the United States, residing at Killion, in the county of Martin and State of Indiana, have invented a new and useful Vehicle-Propeller, of which the following is a specification.

My invention is an improved vehicle-propeller; and it consists in the peculiar construction and combination of devices herein-after fully set forth and claimed.

The accompanying drawing is a side elevation of a bicycle-sled provided with a propelling mechanism constructed in accordance with my invention.

The frame 1, which is here shown as an ordinary bicycle-frame, may be of any suitable construction, and it may be provided either with runners 2, as shown in full lines, or with wheels 3, as is indicated in dotted lines.

A crank-shaft 4 is journaled in suitable bearings on the frame and is provided with pedals 5, whereby it may be rotated. A sprocket-wheel 6 is secured to and rotates with the crank-shaft 4. In rear of the shaft 4, which is the driving-shaft, is a counter-shaft 7, which is provided with a sprocket-wheel 8, that is connected to wheel 6 by an endless sprocket-chain 9. Said shaft 7 is provided at opposite ends with cranks 10. A pair of links 11 have their front ends pivotally connected to the frame and extend rearwardly therefrom. To the rear end of each of the said links is pivotally connected the upper section 12 of a lever 11. Each lever 11 comprises the upper section 12, an intermediate section 13, which is connected pivotally at a point intermediate of its ends to the lower end of the section 12, as at 15, and a lower or foot section 14, the upper end of which is pivotally connected to the lower end of the intermediate section 13, as at 16. The upper end of the intermediate section 13 extends in rear of the lower portion of upper section 12 and is normally pressed toward the same by a spring 17, which in the form of my invention here shown operates on a link-bolt 18, that is attached to the upper portion of the intermediate section 13, passes through an opening 19 in the upper section 12, and extends in advance thereof, the spring 17 being disposed on the front portion of said link-bolt. Hence the tendency of the spring 17 is to extend the intermediate section 13 in the

same direction as the section 12. Each foot-section 14 is acted upon by a spring 20, which tends to normally extend the foot-section in the same direction as the intermediate section 13. The said foot-sections 14 are preferably provided on their lower sides with traction-spurs or roughened surfaces, which are indicated at 21. The upper end of each section 12 is connected to one of the cranks 10 by a pitman 22. The said pitmen are fulcrumed on the outer ends of rocking links 23, which are pivoted to the frame, as at 24. The cranks 10 are oppositely disposed, so that the sectional jointed levers 11 are successively operated.

The operation of my invention will be readily understood. The shaft 7 being in rotation the pitmen 22 alternately draw forward, raise, move rearward, and depress the upper ends of the upper sections 12 of levers 11, hence causing the foot-sections of said levers to alternately move forward, engage the ground or ice or snow, as the case may be, and move rearward thereon, the propelling-levers 11 striding like the hind legs of a horse, and hence effectually propelling the sled or bicycle.

Having thus described my invention, I claim—

1. In combination with a lever comprising an upper section, an intermediate section and a lower section, said sections being flexibly jointed together and normally extended in the same direction by springs, a movable support to which the upper section is fulcrumed and means to operate said upper section, substantially as described.

2. In combination with a lever comprising an upper section, an intermediate section and a lower section, said sections being flexibly jointed together and normally extended in the same direction by springs, a movable support to which the upper section is fulcrumed, a revoluble crank, a pitman connecting the latter to said upper section, and a swinging element forming the fulcrum for said pitman, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ROBERT C. ROTH.

Witnesses:

WESLEY J. PORTER,

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